

October 23, 2023

Undertaking #013

MPI to provide revised RI-10 based on the correction to the severity trend for the accident insurance year 2021-22

RESPONSE:

MPI fit an alternative severity trend model for Basic Collision coverage. This is a single model with a "Time 1" (2010 through 2020) set as a categorical variable of 0 and "Time 2" (2020 through 2022) set as an increasing categorical variable.

In MPI's response provided for request CAC(MPI) 1-68, the severity trend was fit using an alternative severity trend model starting from 2009 accident year. CAC's request was to fit an alternative severity trend model starting from 2010. The correction to CAC (MPI) 1-68 response was filed as Exhibit #70.

The figure below displays the selected severity trend used for 2024 GRA submission and the indicated severity trend based on the alternative model before and after correction.

Figure 1 Comparison of 2024 GRA Selected Severity Trend to Severity based on Alternative Severity Trend Model

Line No.	Accident Insurance Year	2024 GRA Selected Severity Trend	Alternative Severity Trend start period 2009	Alternative Severity Trend start period 2010
1	2009-2020	5.67%	5.56%	5.66%
2	2021-2022	10.68%	9.59%	9.38%

The below figure displays the fit statistics for the alternative models based on on 2009 and 2010 starting periods.

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Figure 2 Comparison of Fit Statistics for Alternative Severity Trend Models based on 2009 and 2010

Starting Period	Years of Data	Loss Trend	R ²	Adjusted R ²	Time p-value	Model Parameter p-value
2009	14	5.56%	0.9936	0.9925	0.0000	0.0115
2010	13	5.66%	0.9931	0.9918	0.0000	0.0208

Assuming the above alternative past severity trends with a starting period of 2010 and no other changes, the indicated rate change is reduced from -1.48% to -2.41%, i.e. a -0.93% change to the rate indication.

Assuming the above alternative past severity trends with a starting period of 2009 and no other changes, the indicated rate change is reduced from -1.48% to -2.33%, i.e. a -0.85% change to the rate indication.

Please see Figure 3 for a revised RI-10 based on the alternative severity trend with a starting period of 2010.

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Figure 3 Rating Year 2024/25 Major Classification Applied for Rate Change

Line No.	Coverage	Overall	Private Pass.	Comm.	Public	Motor-cycles	Trailers	ORV's
1	24/25 Units	1,280,333	863,331	49,070	13,089	19,322	244,888	90,633
2	Claims	696.75	935.34	724.90	1,851.25	641.96	48.84	4.41
3	Claims Expense	119.82	160.85	124.66	318.36	110.40	8.40	0.76
4	Road Safety	9.45	12.81	12.81	12.81	12.81	0.00	0.00
5	Operating Expense	54.09	73.30	73.30	73.30	73.30	0.00	0.00
6	Regulatory/Appeal	3.35	4.54	4.54	4.54	4.54	0.00	0.00
7	Commission: Vehicle	37.04	49.21	43.57	106.41	33.11	3.04	0.23
8	Prem Tax: Vehicle	27.37	36.36	32.19	78.63	24.47	2.25	0.17
9	Comm & Prem Tax: Driver	2.85	3.87	3.87	3.87	3.87	0.00	0.00
10	Commission Flat Fee	5.70	7.73	7.73	7.73	7.73	0.00	0.00
11	Reins: Casualty	2.01	2.72	2.72	2.72	2.72	0.00	0.00
12	Reins: Catastrophe	11.38	12.45	12.45	12.45	0.00	12.45	0.00
13	Fleet Rebates	15.25	11.48	129.75	248.29	0.00	0.00	0.00
14	Anti-Theft Discount	0.57	0.84	0.00	0.00	0.00	0.00	0.00
15	Driver Prem	51.89	70.32	70.32	70.32	70.32	0.00	0.00
16	Service Fees	21.41	29.02	29.02	29.02	29.02	0.00	0.00
17	Req Rate	912.33	1,212.16	1,073.13	2,621.00	815.56	74.98	5.57
18	Adj. Req Rate	890.08	1,182.59	1,046.96	2,557.08	795.67	73.15	5.43
19	23/24 Average Rate	870.37	1,150.24	908.29	2,252.53	882.92	62.24	5.69
20	Major Class Drift	4.8%	6.0%	4.6%	1.2%	-0.1%	7.3%	0.0%
21	24/25 Average Rate							
22	Without Rate Change	912.02	1,218.86	949.64	2,279.87	882.12	66.81	5.69
23	Full Cred Req Change	-2.4%	-3.0%	10.2%	12.2%	-9.8%	9.5%	-4.6%
24	Applied for Change	0.0%	-0.6%	13.0%	14.9%	-7.6%	12.2%	-2.3%
25	Credibility		99.3%	89.1%	68.6%	76.3%	97.6%	93.8%
26	Cred Wtd Change		-0.6%	11.6%	10.2%	-5.8%	11.9%	-2.1%
27	Cred Wtd Req Rate	910.65	1,211.80	1,059.36	2,513.18	831.12	74.76	5.57
28	Cred Wtd Req Rate (Bal)	912.02	1,213.63	1,060.96	2,516.97	832.37	74.87	5.58
29	Cred Wtd Change (Bal)	0.0%	-0.4%	11.7%	10.4%	-5.6%	12.1%	-2.0%

Please see Figure 4 for a revise RI-10 based on the alternative severity trend with a starting period of 2009.

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Figure 4 Rating Year 2024/25 Major Classification Applied for Rate Change

Line No.	Coverage	Private				Motor-		ORV's
		Overall	Pass.	Comm.	Public	cycles	Trailers	
1	24/25 Units	1,280,333	863,331	49,070	13,089	19,322	244,888	90,633
2	Claims	697.35	936.16	725.36	1,852.93	642.05	48.85	4.41
3	Claims Expense	119.93	161.00	124.75	318.66	110.42	8.40	0.76
4	Road Safety	9.45	12.81	12.81	12.81	12.81	0.00	0.00
5	Operating Expense	54.09	73.30	73.30	73.30	73.30	0.00	0.00
6	Regulatory/Appeal	3.35	4.54	4.54	4.54	4.54	0.00	0.00
7	Commission: Vehicle	37.07	49.26	43.59	106.50	33.12	3.04	0.23
8	Prem Tax: Vehicle	27.39	36.40	32.21	78.69	24.47	2.25	0.17
9	Comm & Prem Tax: Driver	2.85	3.87	3.87	3.87	3.87	0.00	0.00
10	Commission Flat Fee	5.70	7.73	7.73	7.73	7.73	0.00	0.00
11	Reins: Casualty	2.01	2.72	2.72	2.72	2.72	0.00	0.00
12	Reins: Catastrophe	11.38	12.45	12.45	12.45	0.00	12.45	0.00
13	Fleet Rebates	15.25	11.48	129.75	248.29	0.00	0.00	0.00
14	Anti-Theft Discount	0.57	0.84	0.00	0.00	0.00	0.00	0.00
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18	Adj. Req Rate	890.81	1,183.61	1,047.54	2,559.16	795.78	73.17	5.43
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27	Cred Wtd Req Rate	910.65	1,211.85	1,059.10	2,513.17	830.70	74.72	5.57
28	Cred Wtd Req Rate (Bal)	912.02	1,213.67	1,060.69	2,516.94	831.95	74.83	5.58
29	Cred Wtd Change (Bal)	0.0%	-0.4%	11.7%	10.4%	-5.7%	12.0%	-2.0%